

## The psychological functions of tattooing in relation to mental body representations and self-esteem in women in emerging adulthood

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### Summary

**Aim.** Tattooing as a permanent way of modifying the body is most likely to be closely related to the way the bodily self is experienced. Previous research in tattooed people has mainly addressed their self-esteem and sense of uniqueness. In contrast, the elaboration of bodily experiences in the form of mental representations: body image, body schema and sense of body have rarely been addressed. To date, the psychological functions of tattooing and the associated psychological mechanisms underlying the acts of tattooing have also not been explored. The research presented here is an attempt to fill this lack. Their main aim was to explore the associations of the psychological functions of tattooing with psychological representations of the body and self-esteem in women in emerging adulthood.

**Material and methods.** The following methods were used in the study: (1) The Tattoo Psychological Function Questionnaire, (2) The Battery of Tests of The Body Psychological Representations BT-BSR and (3) Rosenberg's Self-Esteem Scale (SES).

**Results.** Depending on the arrangement of the psychological functions of tattooing, the subjects differed in terms of psychological representations of the body and self-esteem. Women in whom the dominant function of the tattoo was the expression of emotions were characterised by weaker mental representations of the body (body image, body schema and sense of body), as well as a lower level of self-esteem compared to women in whom the dominant function of the tattoos was self-creation.

**Conclusion.** The present study shows that among women with tattoos there are significant differences in the way the body is experienced as expressed in mental representations of the body. The pattern of mental functions of tattoos in which expression of emotion dominates over self-creation remains significantly related to weaker body image, body schema and sense of body, as well as to lower levels of self-esteem.

**Key words:** mental body representations, psychological functions of tattooing, tattoo, body modification

## Introduction

Today, there is a significant increase in interest in the practice of tattooing [1]. Statistics show that those choosing to permanently alter their bodies are a growing group of people. A particular upward trend is noted among Western societies: in 2012, 21% of Americans had tattoos, and in 2019, this figure rose to 30% [2].

With the increase in tattooed individuals, there has been increased interest in the question of why people choose to modify their bodies. In response, researchers have attempted to establish the motives and functions of tattoos [3–7], developing classifications that emphasised mainly cultural, sociological and anthropological meanings of tattooing. They singled out psychological constructs such as identity or emotion without further explaining their relationship to tattooing.

The relationship of the tattoo to the way the body, on which the tattoo is permanently placed and then viewed from the perspective of the outside world, is experienced seems to be particularly important [8]. The visual and external nature of tattooing has been particularly explored in psychological research emphasising the aesthetic function of tattooing. According to some reports, a tattoo represents the uniqueness of its owner [9], as well as enhancing the owner's sense of self-worth [10].

In the literature, not much can be found on the emotional dimension of tattooing. Since the body plays an important role in emotional regulation [11], it seems that its permanent modification in the form of a tattoo can change the way the self is experienced. There are studies that indicate that having tattoos affects the process of experiencing emotions [12, 13], which suggests that some people choose to modify their bodies due to a desire to cope with difficult experiences. A similar trend is indicated by data on women who have experienced violence. Following tattooing, they have a sense of reclaiming their bodies and are characterised by improved well-being [14].

In the past, due to lack of social acceptance and exposure to criticism, women did not get tattooed as much as men [15]. Nowadays, women modify their bodies according to their own preferences, and hence it seems important to understand the specifics of how women with tattoos experience their bodies. Of particular interest are the experiences of women who are in emerging adulthood [38]. It is during this developmental period that most people choose to modify their bodies. Emerging adulthood is a moment of identity construction and the creation of one's self.

This study seeks to answer the questions:

- (1) What psychological functions might tattoos serve?
- (2) What are the relationships between these functions and the way women experience their bodies and self-esteem in emerging adulthood?

## Tattoo

A tattoo is one form of body modification, i.e. “the intentional alteration of the human body for non-medical reasons” [16, p. 60]. In the case of permanent tattooing,

the pigment is inserted into the skin, usually using needles inserted into a special tattoo machine [4]. Deciding to get a tattoo can be motivated by a variety of needs. One definition indicates that it is done “for aesthetic or decorative reasons” [16, p. 58]. When asked why they choose to tattoo their body, respondents indicate, in addition to the need to beautify themselves, the need to express emotions or express their self [5].

### **The functions of tattooing**

Researchers of the tattoo phenomenon, in an attempt to find an answer to the question of the meaning of tattooing [5–7], have developed several classifications of the socio-cultural functions of tattooing. One of these was made by Szaszekiewicz [6], who distinguished eight tattoo functions: social function (symbol of belonging to a group, sign of social standing, sign of prestige, marital status), sexual function (symbol of sexual maturity, an element to enhance erotic arousal), aesthetic function (body decoration), repressive and warning function (form of stigmatisation, identification mark), patriotic function (symbol of support for or opposition to a political system), psychological function (symbol of feelings or attitudes, sign of interest, commemoration of important experiences), military function (a sign of belonging to a group of warriors, weapon of war), magical-religious function (symbol of faith amulet). Another proposal was made by Wohlrab et al. [7] indicating 10 categories of motives for tattooing: beauty, art and fashion (beautifying oneself, keeping up with trends); individuality (being unique, controlling own appearance, creating own identity); personal narratives (expression of own values and experiences); physical endurance (endurance testing, pushing the boundaries); group membership and involvement (showing love or friendship); resistance (defying society/authority); spirituality and cultural tradition (demonstration of belonging to a particular religion memory of values); addiction (giving oneself a pleasant sensation); sexual motives (emphasising one’s sexuality); no specific reason (impulse result, result of an unconscious decision).

The above classifications represent a set of socio-cultural functions and motives of tattooing, specific to people from different cultures and different historical periods. Despite the fact that the urge to modify the body is a universal phenomenon [17], it is questionable to treat the proposed classification as a universal one, referring it to people coming from distinct cultural circles (e.g. the American population vs. the Bagwa tribe from Cameroon, or the population of convicts vs. the population of Poles), and, consequently, it risks distorting the original meaning of the tattoo [18].

To date, a psychological classification of the function of tattoos has not been developed to expand our knowledge of the personality characteristics of people with tattoos. The socio-cultural classification of Szaszekiewicz [6] distinguishes a separate psychological function of the tattoo. According to her, the tattoo represents feelings, attitudes, skills, interests, and important life events, but the meaning of these constructs has not been developed so far. It seems that distinguishing the psychological functions of tattooing may make it possible to find a specific way of experiencing oneself in

a group of people with tattoos, especially in the bodily dimension, which is directly affected by tattooing.

### **The body and tattooing**

Although the body is directly related to tattooing, there is little research that explains how those who have tattoos experience their corporeality. Most of the work focuses around self-esteem and feelings of uniqueness [9, 10, 19–21], which only indirectly relate to the body, mainly in its perceptual and valuing dimensions.

In the case of self-esteem, the relationship of tattooing to self-perception is not clear. Swami [11] showed that respondents' self-esteem, body satisfaction and sense of uniqueness increase after tattooing. Pajor et al. [20] indicated that the self-esteem of people with tattoos is higher only in some of its dimensions. In contrast, a study by Deschesnes et al. [19] revealed no differences in self-esteem between people with and without tattoos. The ambiguities are most likely due to the broad meaning of self-esteem, which can refer to different dimensions of self-perception.

One study examined body image in women with tattoos in addition to self-esteem [22]. It was found that women with tattoos had a greater distance between the current self and the ideal self than women without tattoos, which could indicate that women with tattoos have lower self-esteem than women without tattoos, but no such differences in body image were found in women with tattoos. Another study found that women with tattoos perceived themselves as less attractive compared to women without tattoos [23], which also suggests ambiguity in the conclusions regarding feelings of attractiveness.

The increase in self-esteem after tattooing may be the result of achieving a state of uniqueness and distinctiveness from others, which influences more positive self-perceptions [9, 21]. However, it is unclear how long the sense of uniqueness persists from the time of tattooing and whether the group of tattooed individuals is homogeneous enough in terms of motives for tattooing to be comparable in terms of self-esteem and other variables. A study by Swami [10] seems particularly interesting, in which women immediately after getting a tattoo had a better appreciation of their body and felt special, whereas three weeks after the procedure they experienced social physique anxiety, which would indicate that the effect of body satisfaction is diminished by exposure to the outside world, in which tattoos in women are perceived more negatively than tattoos in men [15].

The above studies largely relate to external aspects of the body, such as the perception of attractiveness, but little is still known about the deeper meaning of tattooing. Reports on the relationship of experiencing trauma and body modification seem to be relevant. A number of studies have argued that tattoos are more common among people who have experienced emotional trauma in childhood [13, 24]. Women with a history of sexual abuse declared that tattoos helped them regain a sense of body ownership [14]. Any trauma stored in the body affects the experience of the body [25], and hence it is possible that tattooing represents a time-shifted self-therapy [14, 26,

27]. It is designed to help them cope with what may have happened long before the modification was made. Tattooing enables people to regain control over their emotions and body [28], which can be lost as a result of trauma [25].

The associations of making body modifications with self-harm are also important. In a study by Stirn and Hinz [29], 27% of people with tattoos reported self-cutting practices and abnormal relations towards their own body. These researchers suggest that people with a history of self-harm may be more likely to make body modifications to cope with difficult emotions. Wycisk [30] indicates that there is a relationship between the bodily self and self-harm; according to her, people who frequently self-harm have less positive attitudes towards their bodies. Self-harm is related to an abnormal experience of one's body [31], and represents an attempt to cope with too much emotional charge (emotional tension) or too little feeling (emotional emptiness).

The above-mentioned studies indicate that the body plays an important role in the processing of emotions and in the construction of one's own identity, and hence it seems important to find an answer to the question: what kind of relationship with the body do young women with tattoos have, taking into account the overall bodily experience expressed in mental body representations?

### **Mental body representations**

One concept that enables a multidimensional understanding of corporeality is Mirucka's theory of the embodied subject [32]. According to her, the way the body is experienced is expressed in three mental body representations: body image, body schema and body sense. This triad of mental representations is based on somatosensory mechanisms: exteroception, proprioception and interoception.

Body image can be understood as a perceptual image of the body, which is complemented by emotions and beliefs directed towards it [33]. An important feature of body image is its relative constancy. Due to the elaborate structure of the self-image, with at least two dimensions distinguished in it, perceptual and emotional one, this phenomenon cannot be considered only on a positive-negative continuum [34]. The emotions directed towards the self must be taken into account. The body schema consists of neuronal representations related to moving, directing one's body and maintaining balance [33]. In the kinetic dimension, the body schema is associated with movement, and in the kinesthetic dimension it imparts a sense of body form and a sense of body spatiality. The last key representation of the body is body sense, based largely on interoception. Sense of body "encompasses the overall experience of physical condition, which is fundamental to a subject's mood and emotional state" [32, p. 13]. In the sense of the body, impressions, coming from different sensory channels [11] and the affect that accompanies these impressions, seem to be the most relevant. Through the sense of the body, it is possible to set in motion a process of regulation of the different states of the body.

The quality of individual representations determines how the bodily self is experienced. People who accept their physical appearance are able to manage their body well and feel its coherence with the self. They are highly aware of the information that flows from the body and are thus better able to cope with strong emotions. Additionally, they are characterised by a coherent and positive experience of their body.

In our study we refer to the concept of mental body representations [32] and try to answer the question: are there significant relationships between the psychological functions of tattooing and the way the body is experienced (expressed in a constellation of mental body representations: body sense, body image and body schema) and self-esteem in women in emerging adulthood?

We posed the following hypotheses:

H1: Tattooed women aged 18–25 reveal significant relationships between the psychological functions of tattooing (determined by the motives and meanings of the tattoo) and the arrangement of mental representations of the body and self-esteem.

H1a: Women with a clearly marked self-creation function experience their bodies positively. Which means that their mental representations of the bodily self rank high, as does their self-esteem.

H1b: Women who attribute tattooing mainly to the function of expressing their emotions present lower levels of mental representations of the body: body sense, body image and body schema, as well as self-esteem. In other words, their psycho-physical experience of self is less positive compared to women in whom the dominant mental function of tattooing is self-creation.

## Method

### Participants and procedure

We recruited respondents on the Facebook groups for people interested in tattoos. On several of them we posted information about the research we were conducting. Respondents received a link to a series of surveys with information about the anonymity of the study and the possibility to opt out at any time.

The study group consisted of 321 people identifying themselves as women, aged between 18 and 25 years ( $M_{\text{age}} = 21.49$ ;  $SD = 2.00$ ). Among them, there were 85 (26.48%) with one tattoo and 236 (73.52%) women who had been tattooed multiple times in the last few years (min. = 2; max. = 40;  $M_{\text{tat}} = 5.71$ ;  $SD = 5.87$ ). In the repeatedly tattooed group were: 33.30% of women with two tattoos, and 35% with several (3 to 5 tattoos). The remaining women (31.70%) had more than five tattoos, with those with very numerous tattoos (20 to 40) being very few (4.60% of women). For the majority of the surveyed women ( $n = 201$ ; 62.62%), the most recent tattoo experience dated back to within the last year; 83 women (25.86%) had had their last tattoo within the last few weeks prior to the survey, and only 37 survey participants (11.52%) had been tattooed relatively long ago, i.e. several years ago.

## Methods

The study used: (a) *My Tattoos* method (Jabłońska, 2021), (b) the tattoo psychological function questionnaire (Jabłońska, 2021), (c) the battery of tests of the body self-representations (BT-BSR) (Mirucka, 2018), and (d) Rosenberg's *Self-Esteem Scale* (SES; Polish translation by Łaguna et al., 2007).

*My Tattoos* is a qualitative method that shows a silhouette of the body from the front and back, with separate versions for men and women. The respondents are asked to indicate where their tattoos are located. The aim of the tool was to increase awareness of the body and the tattoos on it, and to determine the degree of tattoo coverage on the body.

The study of the psychological functions of tattooing was conducted using twelve questions, assigned to two parts. The first concerned the motives for getting a tattoo ("What made you get a tattoo?") and the second its meaning ("What does your tattoo mean to you?"). In response to the first question, the person made a multiple choice from a given pool of six motives: (a) a desire to adorn the body, (b) a desire to capture art on the body, (c) a desire to express one's individuality, (d) a desire to commemorate important people/events, (e) a desire to show membership in a subculture, and (f) a desire to show one's emotions. Finally, the respondent could score from zero (when she did not select any motive) to six points (when she ticked all possible motives). Similarly, in part two, on the meaning of the tattoo, the respondent answered the question "What does your tattoo mean to you?" by selecting the options given: (a) body decoration, (b) art on the body, (c) expression of one's individuality, (d) commemoration of important people/events, (e) showing membership of a subculture, and (f) expression of one's emotions. The two parts of the study were complementary to each other, meaning that they addressed the same aspects of tattooing, although they emphasised the motive once and the meaning of the tattoo the second time. The study adopted six motives and six meanings to refer to the two main psychological functions of tattooing: (a) the function of self-creation, and (b) the function of expressing one's emotions (i.e. the emotional function). The function of self-creation was operationalised with all the highlighted motives and meanings excluding the sixth one – emotional. As a result, a person could score a maximum of 10 points, where extremely low (0–2 points) or extremely high (7–9 points) scores indicated either a very weak or a very intense occurrence of the mental function of the tattoo as self-creation, respectively. In contrast, the emotional function of the tattoo was only determined by the sixth motive and sixth meaning chosen by the respondent. Which meant that the obtained score could range from zero to two, where zero indicated the complete absence of the emotional function of the tattoo, and a score of one or two indicated its presence. In the end, the tested person obtained two scores, which were indicators of both psychological functions of the tattoo: self-creation and expression of emotions. Cronbach's alpha for the tool used was:  $\alpha = 0.73$ .

The battery of tests for the study of mental body representations consists of a set of three scales: the *Body Schema Scale* (BSS), the *Body Image Scale* (BIS), and the



*Sense of Body Scale* (SBS). The BSS is used to examine body schema representations (e.g. aspects of control over one's own body, mainly related to proprioception). It consists of six items (e.g. "I feel that my body limits me"; "My movements are graceful and harmonious"). A high score on the BSS indicates a high degree of control over one's own body, and a sense that the body is an integral part of the self. The BIS scale (mainly related to extraversion) is used to measure beliefs and emotions directed towards one's body. It contains 6 statements (e.g. "I look completely normal"; "There are parts of my body that I completely disapprove of"). A high score on this scale indicates acceptance of one's appearance and a positive perception of one's body. Low scores, on the other hand, indicate a lack of acceptance of one's body and its negative impact on the self. The third scale, the SBS, focuses on interoceptive feelings and measures a general sense of physical fitness, as well as physical needs. The SBS questionnaire contains 18 items (e.g. "I feel strong and healthy"; "I am ashamed of my body"; "I treat myself with body massages, baths, good meals, etc."). High scores on this scale indicate the ability to read one's own body signals, the ability to cope with strong emotions, and sufficient satisfaction of one's own physical needs. Low scores indicate a low awareness of one's own body signals, an inability to cope with intense emotional states, and a failure to meet one's own physical needs. Responses were given using a 7-point Likert scale from 1 ("strongly disagree") to 7 ("strongly agree"). The battery of tests for the study of mental body representations has good psychometric properties [32]. All scales used in this study showed high reliability. Cronbach's alpha for the used scales was:  $\alpha_{\text{BSS}} = 0.76$ ;  $\alpha_{\text{BIS}} = 0.88$ ,  $\alpha_{\text{SBS}} = 0.87$ .

The Rosenberg's *Self-Esteem Scale* (SES) is a tool for measuring self-esteem. This scale contains 10 items (e.g. "At times I think I am no good at all"; "I wish I could have more respect for myself"; "I take a positive attitude towards myself"). Responses were given using a 4-point Likert scale ranging from 1 ("strongly agree") to 4 ("strongly disagree"). Self-esteem as measured by this tool is considered a relatively stable trait. It is a positive or negative attitude towards the self; self-esteem is therefore a global assessment of the self. High scores indicate favourable self-esteem, i.e. this person feels valuable; in contrast, low scores indicate dissatisfaction with the self and low self-esteem. The reliability coefficient (Cronbach's alpha) of the SES used in this study was high ( $\alpha_{\text{SES}} = 0.91$ ).

## Results

The analysis of the results began with an exploration of the motives and meanings of women tattooing. Approximately 60% of the women with one and many tattoos cited the desire to decorate their body as the main motive for getting a tattoo. The second most frequently revealed motive (about 36%) was the desire to express one's individuality. The third most frequent motive (approx. 32%) was the motive to express one's emotions; just before that the motive to commemorate important people and events



(approx. 28%) and the desire to capture art on one's body (approx. 25%). Only five of the entire group of surveyed women (about 2%) stated that they tattooed for the sake of showing their subculture affiliation (*Motives for tattooing*).

An examination of the meaning of tattoos revealed that for about 72% of all surveyed women a tattoo is primarily a body decoration, while for about 68% of the respondents it is a way of expressing their individuality. More than 48% of the surveyed group considered the tattoo to be art on their body, and for 45% it is an expression of their emotions. Relatively often, the surveyed women (about 41%) described the significance of their tattoos as a way of commemorating important people and events (*The meaning of tattoos*).

Based on the motives and meanings explored in the group of women with tattoos, two main psychological functions of tattooing (PFT) were identified: (a) the function of self-creation and (b) the function of expressing one's emotions (cf. Table 1). The results obtained for the psychological function of self-creation (PFSC) revealed that the vast majority of the women ( $n = 135$ ; 42.10%) ranked at the medium score level (3–4 points). A slightly smaller number of respondents, 103 (32.10%), received high scores on the PFSC, ranging from 4 to 8 points. The lowest scores (0–2 points) were obtained by 83 women (25.90%), with only eight of them (2.50%) not selecting any tattoo theme and/or meaning that related to the PFSC. Univariate analysis of variance in a between-group design showed that the three groups of women distinguished by PFSC did not differ significantly in terms of mean scores in body representations and self-esteem (cf. Table 2). For the sake of further analysis, the entire group of female respondents with tattoos was divided into two subgroups: (a) low, i.e. below average scores ( $x \leq M$ ) and (b) high scores ( $x > M$ ). As a result, there were 144 subjects (44.90%) in the SC0 group (with scores less than  $M = 3.71$ ), and in the SC1 group – 177 women (55.10%) who scored at or above 3.71 on the PFSC.

Table 1. Psychological function of self-creation (PFSC) and emotional expression (PFEE) in women with tattoos ( $N = 321$ ): frequencies and percentages

Score	PFSC $n$ (%)									PFEE $n$ (%)		
	0	1	2	3	4	5	6	7	8	0	1	2
Total group ( $N = 321$ )	8 2.50	9 2.80	66 20.60	61 19.00	74 23.00	50 15.60	30 9.30	18 5.60	5 1.60	163 50.80	69 21.50	89 27.70
$M$ (SD)	3.79 (1.71)									0.77 (0.86)		
Women with one tattoo ( $n = 85$ )	6 7.10	3 3.50	26 30.60	15 17.60	20 23.50	9 10.60	5 5.90	1 1.20	0 0	50 58.80	12 14.10	23 27.10
$M$ (SD)	3.08 (1.57)									0.68 (0.87)		

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Women with many tattoos ( <i>n</i> = 236)	2 0.80	6 2.50	40 16.90	46 19.50	54 22.90	41 17.40	25 10.60	17 7.20	5 2.10	113 47.90	57 24.10	66 27.10
<i>M</i> ( <i>SD</i> )	4.04 (1.68)									0.80 (0.85)		

Table 2. Comparison of the three PFSC groups in terms of representations of bodily self and self-esteem: results of ANOVA (*N* = 321)

Group	PFSC 1 low ( <i>n</i> = 83)	PFSC 2 medium ( <i>n</i> = 135)	PFSC 3 high ( <i>n</i> = 103)	Significance of differences	
	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )	<i>F</i> (2;318)	<i>p</i>
Body image	21.54 (9.99)	20.34 (9.47)	22.03 (9.91)	0.948	0.389
Body schema	24.10 (6.77)	24.44 (6.23)	24.35 (6.79)	0.071	0.929
Body sense	22.36 (6.65)	22.48 (6.01)	23.73 (6.13)	1.533	0.218
Self-esteem	28.36 (6.62)	26.98 (6.76)	28.30 (7.40)	1.466	0.232

In the case of the psychological function of emotion expression (PFEE), more than half of the female respondents (*n* = 163; 50.80%) did not identify in themselves any motive or meaning of the tattoo that related to the expression of their emotions (cf. Table 1). Of the remaining female respondents: 21.50% (*n* = 69) identified one motive or meaning relating to the expression of emotions (thus scoring one point) and 27.60% (*n* = 89) received the maximum two points in the PFEE. The ANOVA revealed that the three groups of women, distinguished by the magnitude of the PFEE, differed significantly from each other in terms of mean scores in body representations and self-esteem (cf. Table 3). Significant differences were revealed between the PFEE 1 group, characterised by zero scores in the emotion expression function, and the PFEE 3 group with the highest scores. Only for the mental representation of body sense did additional differences occur between the PFEE 1 and PFEE 2 groups, i.e. with zero and average scores. Finally, the obtained results were divided into two groups indicating: (a) absence of PFEE (0 points) and (b) presence of PFEE (1 or 2 points). In effect, the EE0 group included 163 female subjects (50.80%) and the EE1 group the remaining 158 (49.20%).

Table 3. Comparison of the three PFEE groups in terms of representations of the bodily self and self-esteem: results of ANOVA (N = 321)

Group	PFEE 1 low (n = 163)	PFEE 2 medium (n = 69)	PFEE 3 High (n = 89)	Significance of differences		
	M (SD)	M (SD)	M (SD)	F (2; 318)	$\eta^2$	group differences
Body image	22.85 (9.24)	20.83 (10.73)	18.45 (9.31)	6.109**	0.04	1-3
Body schema	25.26 (6.17)	24.43 (6.52)	22.52 (6.88)	5.230**	0.03	1-2 1-3
Body sense	24.14 (5.83)	22.37 (6.24)	20.88 (6.41)	8.538***	0.05	1-3
Self-esteem	28.89 (6.41)	27.04 (7.48)	26.25 (7.18)	4.760**	0.03	1-3

Significance level designations: \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$

Further statistical analyses were aimed at exploring the associations of the psychological functions of tattooing with mental body representations and self-esteem. In a first step, each female respondent was assigned to one of four new groups formed by the intersection of two axes of psychological functions of tattooing: the PFSC axis and the PFEE axis (cf. Fig. 1). In other words, group assignment depended on the constellation of scores obtained in both psychological functions of tattooing. The first group, G1 (upper right quadrant of the coordinate system), comprised 100 women (31.20%) who scored high on the PFSC (SC1) and simultaneously showed the presence of PFEE (EE1). Group G2 (upper left quadrant of the coordinate system) included 77 respondents (24%) who scored high on the PFSC (SC1) and revealed a complete absence of PFEE (EE0). The third group G3 (lower left quadrant of the coordinate system) was formed of 86 respondents (26.80%) who showed both low scores in PFSC (SC0) and a complete absence of PFEE (EE0). The fourth group, G4 (lower right quadrant of the coordinate system), comprised the remaining 58 women (18.10%) who were characterised by low PFSC scores (SC0) and the presence of PFEE (EE1).

The one-way independent ANOVA revealed that the distinguished four groups of female respondents differed significantly in terms of mental representations of the bodily self (body image, body schema and sense of body) and self-esteem (cf. Table 4). Significant differences in body image and body sense are found between the following pairs of groups: (a) SC1\_EE1 and SC1\_EE0; (b) SC1\_EE1 and SC0\_EE0; (c) SC1\_EE0 and SC0\_EE1; (d) SC0\_EE0 and SC0\_EE1. In terms of body pattern, the differences concern three pairs of groups: (a) SC1\_EE1 and SC1\_EE0; (b) SC1\_EE0 and SC0\_EE1; (c) SC0\_EE0 and SC0\_EE1. On the other hand, in terms of self-esteem, significant differences apply to only two pairs of groups of women with tattoos: (a) SC1\_EE0 and SC0\_EE1; (b) SC0\_EE0 and SC0\_EE1.

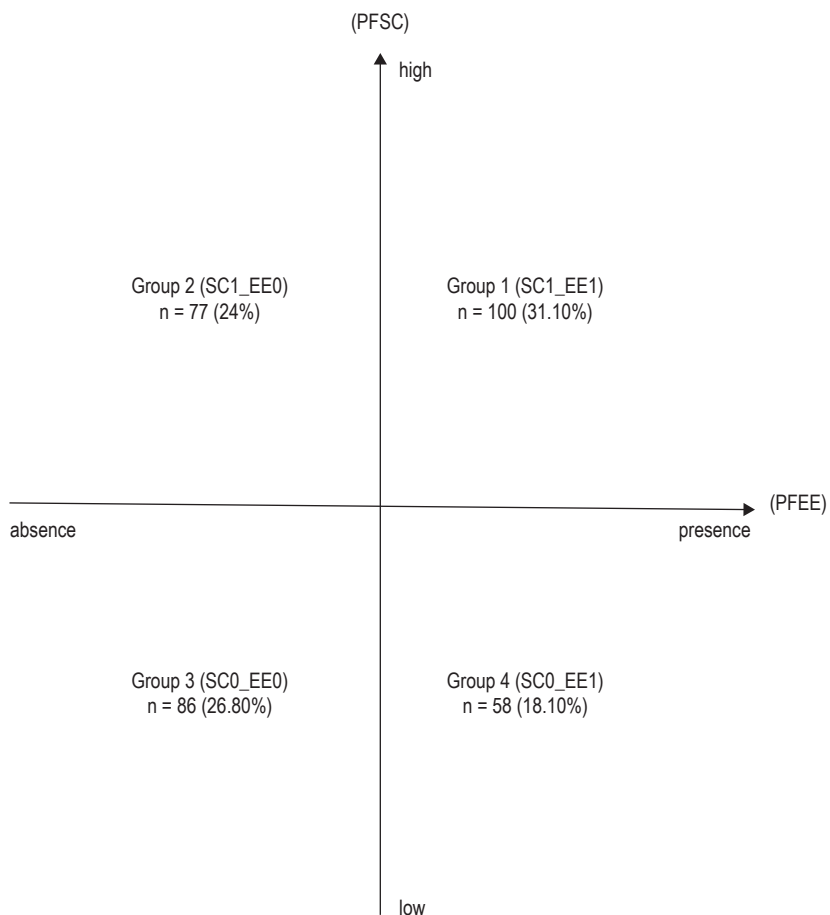


Figure 1. Coordinates of two psychological functions of tattooing:  
the psychological function of self-creation (PFSC) and the psychological  
function of emotional expression (PFEE)

Table 4. Comparison of the four groups (PFT constellations) in terms  
of representations of bodily self and self-esteem: results of ANOVA ( $N = 321$ )

Group	Group 1 ( $n = 100$ )	Group 2 ( $n = 77$ )	Group 3 ( $n = 86$ )	Group 4 ( $n = 58$ )	Significance of differences		
	$M$ ( $SD$ )	$M$ ( $SD$ )	$M$ ( $SD$ )	$M$ ( $SD$ )	$F(3; 317)$	$\eta^2$	Group differences
Body image	19.49 (10.34)	23.03 (8.93)	22.69 (9.55)	19.48 (9.44)	3.267*	0.03	1-2; 1-3; 2-4; 3-4;

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Body schema	23.83 (6.83)	25.88 (5.93)	24.71 (6.36)	22.53 (6.66)	3.261*	0.03	1-2; 2-4; 3-4;
Body sense	22.12 (6.60)	24.39 (5.77)	23.91 (5.91)	20.51 (5.84)	5.848***	0.05	1-2; 1-3; 2-4; 3-4;
Self-esteem	27.34 (7.75)	28.71 (6.36)	29.06 (6.49)	25.31 (6.32)	4.124**	0.04	2-4; 3-4;

Significance level designations: \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$

## Discussion

The aim of this study was to explore the relationship between the psychological functions of tattooing and the way the body is experienced (expressed in a constellation of mental body representations: body sense, body image and body schema), and self-esteem in women in emerging adulthood. The analysis of the motives for tattooing and the meanings attributed to tattoos allowed us to distinguish two main psychological functions of tattooing: (a) the function of self-creation and (b) the function of emotional expression. The first function manifests itself primarily in the desire to decorate one's body with various graphic elements and motives, to capture art on the body, as well as in the desire to commemorate important events and persons and to express one's individuality [34]. The second function relates to treating the act of tattooing and wearing tattoos as a way of expressing one's emotions [35]. The majority of the female participants in the study (97.5%) revealed that tattoos primarily serve a function of self-creation for them. They wear them because with their help they can freely shape their external image and thus give expression to their personality. On the other hand, the function of expression of emotions attributed to tattoos was declared by approximately 50% of the surveyed women, which means that half of the respondents are characterised by the presence of only one function – self-creation, with a complete lack of desire to express emotions by means of a tattoo. Presumably, the psychological function of the tattoo, which is the desire to create oneself, should be considered as the primary and at the same time main function, and the function of expressing emotions as additional and complementary (secondary), albeit significant in the functioning of the person deciding on the act of tattooing.

The analysis of the relationship between the intensity of the self-creation function and self-esteem and the way of experiencing one's body revealed that no matter how much women with tattoos want to shape and express their individuality, their constellations of mental body representations and their level of self-esteem do not differ significantly. This means that body image, body schema, body feeling and self-esteem in women who primarily want to have a tattoo in order to create an external self-image remain at a similar level, even if the intensity of this tattoo function varies greatly.

Significant differences in the arrangement of mental representations of the body and self-esteem emerge when the surveyed women decide on the act of tattooing themselves and then wearing tattoos in order to express, and thus to some extent regulate, their emotions. In a situation marked by the presence of the function of expressing emotions through tattooing, women differ significantly in the way they experience their bodies and self-esteem. The more intensely they want to express their emotions with the acts of tattooing and the tattoos they have, the more their way of experiencing the body is less positive, indicating the presence of weakened mental body representations: body image, body schema, sense of body, and reduced self-esteem. This may mean that women who experience difficulties in perceiving bodily sensations and experiences, and thus present a lower awareness of their body-related needs, by tattooing themselves and having tattoos are primarily trying to express their emotions. Presumably, in their case, the act of tattooing serves the function of enhancing the experience of the bodily self (among other things, the sense of the living self), analogous to the way that for some self-harmers the act of self-harm serves to intensify their very weak sense of existence [36].

An attempt to take both psychological functions of tattooing together (i.e. in a coordinate system) made it possible to distinguish four groups of study women with tattoos: (a) with high values of both functions: self-creation and emotion expression, (b) with high values of self-creation function and absent emotion expression function, (c) with low intensity of self-creation function and high values of emotion expression function, and (d) with low intensity of self-creation function and absent emotion expression function (cf. Figure 1). Comparing these groups of women with tattoos with each other revealed the presence of significant differences in all three mental body representations. The highest mean scores in body image, body schema and body sense were obtained by women from groups two and three, in whom the emotion expression function is completely absent and the self-creation function can take on any value: both low and very high. The women in these two groups differ significantly from the other subjects, who use the tattoo mainly to express their emotions, regardless of the value of the self-creation function. In terms of self-esteem, significant differences are found only between groups two and four and three and four, i.e. between those female respondents who use tattooing exclusively for self-creation, regardless of its intensity, and those who use tattoo acts primarily to express their emotions, omitting the self-creation function almost entirely.

In conclusion, the obtained results allowed the verification of the formulated hypotheses. Tattooed women in emerging adulthood reveal significant relationships between the psychological functions of tattooing and the constellation of mental body representations and self-esteem. Women with a clear self-creation function, while lacking an emotional expression function, experience their bodies positively. Which means that their mental representations of the bodily self rank high, as does their self-esteem. In contrast, women who attribute to tattooing mainly the function of expressing emotions present significantly lower levels of body image, body schema and sense of

body and self-esteem. In other words, their psycho-physical experience of self is less positive compared to those women in whom the dominant psychological function of tattooing is self-creation.

### **Strengths and limitations**

A weakness of the present study is the restriction of the psychological functions of tattooing to two types of experience – emotional and identity. Presumably, there are also other psychological functions that play an important role in shaping the relationship between tattooing and experiencing the body.

The disparity in the number of items measuring each function also appears to be important. The function of self-creation is measured by more items than the function of emotional expression. It seems that there are more phenomenologically graspable manifestations of self-creation than expression of emotions, hence the difficulty in generating items to measure this function.

Another weakness of the study is the lack of inclusion of questions about the respondents' mental health history. Asking these would have made it possible to test for possible links between mental health disturbances and the function of emotion expression, which could have consequently expanded knowledge of the emotional role of the tattoo.

At the same time, the very fact of considering the psychological functions of tattooing is a strength of the present study. Previous research on people with tattoos has not considered the function of tattooing and its relationship with other psychological variables [21, 22]. None of the reports provide information on how people with tattoos experience their bodies, expressed in terms of mental representations of the body: body image, body schema and sense of body.

### **Practical implications**

The present findings provide important guidance for clinicians working with young women in emerging adulthood. The presence of tattoos may indicate an attempt to express emotions and a way of coping with the challenge of forming one's own identity [37]. The term "emerging adulthood" was introduced by Arnett [38] in response to cultural shifts extending the time to enter into commitments that in the past symbolised being an adult. There is now a mobility of social norms, rules and expectations which means that those moving towards adulthood are subjected to an attempt to set their self on shifting ground. It becomes a source of much tension and uncertainty for young people. Tattooing can be an aid for them in constructing and strengthening their self [39, 40].

Many women who have experienced emotional trauma in the past [42] declare that tattooing has a therapeutic dimension for them, which would indicate its alternative healing properties. It seems important to include the dimension of body modification



in therapeutic processes in order to better understand the bodily experience of those seeking help. A tattoo can carry a lot of relevant information about the inner conflicts and needs of the people who decide to get one [18].

### Declarations

The study was reviewed and approved by the Research Ethics Committee of the Institute of Psychology of the Catholic University of Lublin. Decision number: KEBN\_17/2022. The respondents agreed to participate in the study by selecting this option in the online form due to the form of research (online). All participants provided consent prior to the research.

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